EPA Region 7 TMDL Review

TMDL ID	112	*Water Body ID*	IA 05-CHA-00690-L
Water Body Name	Bob White Lake		
Pollutant	Siltation		
Tributary	South Fork Chariton River		
State	IA	*HUC*	10280201010
Basin	Southern Iowa River Basin		
Submittal Date	12/13/2001		
Approved	yes		

Submittal Letter

State submittal letter indicates final TMDL(s) for specific pollutant(s)/ water(s) were adopted by the state, and submitted to EPA for approval under section 303(d) of the Clean Water Act.

Letter dated December 13th, 2001, and received by EPA December 17th, 2001, formally submitting this TMDL for approval under Section 303(d).

Water Quality Standards Attainment

The water body's loading capacity for the applicable pollutant is identified and the rationale for the method used to establish the cause-and-effect relationship between the numeric target and the identified pollutant sources is described. TMDL and associated allocations are set at levels adequate to result in attainment of applicable water quality standards.

The loading capacity is identified and is justified by estimating the rate in which the lake is filling with sediment using USDA/NRCS methodologies for estimating sediment delivery and incorporating an erosion factor "T", calculated from the delivery predictions. The rationale for the method targets a reduction in sediment to the lake because excess sediment has been identified as negatively impacting the reproduction and growth of a desirable fish community and other aquatic life. A thirty-three percent reduction in sediment to the lake, as identified in the load allocation, and, the surrogate measure of attainment of the Class B aquatic life use in Phase 2, will ultimately result in attainment of aquatic life uses.

Numeric Target(s)

Submittal describes applicable water quality standards, including beneficial uses, applicable numeric and/or narrative criteria. If the TMDL is based on a target other than a numeric water quality criterion, then a numeric expression, site specific if possible, was developed from a narrative criterion and a description of the process used to derive the target is included in the submittal.

Water quality standards and beneficial uses are described as well as applicable narrative criteria. A phase 1 numeric expression for sediment delivery to the lake is provided, is site specific to the watershed, and is described using USDA/NRCS methodologies for estimating sediment delivery along with incorporating an erosion factor "T' calculated from the delivery predictions. A Phase 2 surrogate measure is also identified as a fully supporting Class B aquatic life use which will be determined in accordance with the Statewide Biological Sampling Plan protocol. A further goal of the TMDL is to the extent possible, prolong the life expectancy of the lake.

Link Between Numeric Target(s) and Pollutant(s) of concern

An explanation and analytical basis for expressing the TMDL through surrogate measures (e.g., parameters such as percent fines and turbidity for sediment impairments, or chlorophyll-a and phosphorus loadings for excess algae) is provided, if applicable. For each identified pollutant, the submittal describes analytical basis for conclusions, allocations and margin of safety that do not exceed the load capacity.

It has been determined that sediment has impacted the fishery of the lake either directly or indirectly through loss of habitat, interference with sight feeding fish, and/or loss of macrophyte cover, which has ultimately resulted in an imbalance in the fish community. Since excessive sediment deposition has impacted aquatic life in this lake, the target includes both sediment loads to the lake and measurement of the aquatic life within the lake.

Source Analysis

Important assumptions made in developing the TMDL, such as assumed distribution of land use in the watershed, population characteristics, wildlife resources, and other relevant information affecting the characterization of the pollutant of concern and its allocation to sources, are described. Point, non point and background sources of pollutants of concern are described, including magnitude and location of the sources. Submittal demonstrates all significant sources have been considered.

There are no point source contributions of sediment in the watershed. All nonpoint source contributions of sediment were considered. Although the main source of sediment delivery comes from sheet and rill erosion, best management practices implemeted in the watershed have already reduced that sediment load from this source so that the target load of "T" has already been achieved throughout the watershed. However, significant sources still contributing to the sediment load are gullies, both classic and ephemeral, and streambank erosion, all of which are to be reduced by means of the guidance provided in this TMDL.

Allocation

Submittal identifies appropriate wasteload allocations for point, and load allocations for nonpoint sources. If no point sources are present the wasteload allocation is zero. If no nonpoint sources are present, the load allocation is zero.

WLA Comment

The wasteload allocation is zero.

LA Comment

The following load allocations are identified for sediment delivery to the lake: sheet and rill erosion = 3732 t/yr, classic gully = 0 t/yr, ephemeral = 0 t/yr, streambank = 138 t/yr. The total load allocation equals the load capacity.

Margin of Safety

Submittal describes explicit and/or implicit margin of safety for each pollutant. If the MOS is implicit, the conservative assumptions in the analysis for the MOS are described. If the MOS is explicit, the loadings set aside for the MOS are identified and a rationale for selecting the value for the MOS is provided.

The MOS of safety is implicit based on the Phase 2 target where the aquatic life use must be fully restored to the lake in addition to sediment load reductions identified in Phase 1.

Seasonal Variation and Critical Conditions

Submittal describes the method for accounting for seasonal variation and critical conditions in the TMDL(s).

Seasonal variation is considered by accounting for the critical periods during the year when sediment erosion is more likely to occur, that is, in spring and early summer during periods of high rainfall when vegetative cover may be reduced. The load allocations are appropriately expressed as an average per year due to the fact that sediment impacts are experienced over longer time frames and predictions regarding those impacts can only be assessed over multi-year periods.

Public Participation

Submital describes public notice and public comment opportunity, and explains how the public comments were considered in the final TMDL(s).

Public meetings regarding the procedure and timetable for developing the Bob White Lake TMDL were held 1/17/01 in Des Moines, and on 2/1/01 in Corydon, Iowa. The draft TMDL was also discussed in Corydon on 10/31/01. Copies of the draft TMDL were also posted on the IDNR website for public review.

Monitoring Plan for TMDL(s) Under Phased Approach

The TMDL identifies the monitoring plan that describes the additional data to be collected to determine if the load reductions required by the TMDL lead to attainment of WQS, and a schedule for considering revisions to the TMDL(s) (where phased approach is used).

The DNR Fisheries Bureau will conduct an assessment of the lake in accordance with the Statewide Biological Sampling Plan protocol by the end of the 2002 season to characterize the condition of aquatic life. In-lake water monitoring will also be conducted three times per year for each of the field seasons 2000-2004 as part of the Iowa Lakes Survey.

Reasonable assurance

Reasonable assurance only applies when reduction in nonpoint source loading is required to meet the prescribed waste load allocations.

Reasonable assurances are not required in the TMDL because there are no point sources contributing to the impairment in the watershed.